

Suggested Script with References

Slide 1

Diabetes: The Numbers

Diabetes: The Numbers
With Michigan Data



Adapted from the National Diabetes Education Program

Michigan Diabetes Partners in Action
and
Michigan Department of Community Health



Objective:

To increase knowledge about the prevalence and burden of diabetes in the United States and Michigan, as well as understanding of the impact and cost of complications associated with diabetes.

Learning Objectives for participants:

At the end of this presentation, those attending the presentation will:

- Recognize diabetes as an important public health issue for the United States and Michigan
- Understand how age and racial/ethnic groups are affected by diabetes
- Be aware of the prevalence of diabetes and prediabetes in the United States and Michigan
- Name the major complications of diabetes and how they can be prevented or controlled

Slide 2


Diabetes: The Numbers

What is Diabetes?

- Diabetes is a group of diseases characterized by high levels of blood glucose (blood sugar)
- Diabetes can lead to serious health problems and premature death

NIDDK, National Diabetes Statistics fact sheet, NIH, NIH, 2005.

Michigan Diabetes Partners in Action
and
Michigan Department of Community Health



Diabetes is a group of diseases characterized by high levels of blood glucose (or blood sugar) which results from problems with insulin production, insulin action, or both.

Diabetes can lead to serious problems and complications, such as heart disease, blindness, kidney failure, lower-limb amputations, and premature death.

Reference

National Institute of Diabetes and Digestive and Kidney Diseases. National Diabetes Statistics fact sheet: general information and national estimates on diabetes in the United States, 2005. Bethesda, MD: U.S. Department of Health and Human Services, National Institutes of Health, 2005.

Slide 3

Diabetes: The Numbers

Common Types of Diabetes

- Type 1 diabetes
 - 5% to 10% of diagnosed cases of diabetes
- Type 2 diabetes
 - 90% to 95% diagnosed cases of diabetes

NIDDK, National Diabetes Statistics fact sheet. HHS, NIH, 2005.


Type 1 diabetes is an auto-immune disease that develops when the body's immune system destroys pancreatic beta cells—the only cells in the body that make the hormone insulin that regulates blood glucose. People with type 1 diabetes must take insulin every day either by injection or pump. Inhalable insulin is also available.

Type 1 diabetes accounts for 5% to 10% of all diagnosed cases of diabetes and usually affects children and young adults, although the disease can occur at any age. There is no known way to prevent type 1 diabetes.

Type 2 diabetes usually begins as insulin resistance—a disorder in which cells do not use insulin properly. As the need for insulin rises, the pancreas gradually loses its ability to produce it. Insulin resistance and abnormal beta cell function may occur long before type 2 diabetes is diagnosed.

Type 2 diabetes accounts for about 90% to 95% of all diagnosed cases of diabetes. It is associated with older age, obesity, family history of diabetes, history of gestational diabetes, impaired glucose metabolism, physical inactivity, and race/ethnicity. African Americans, Hispanic/Latino Americans, American Indians, and some Asian Americans and Native Hawaiians and other Pacific Islanders are at particularly high risk for type 2 diabetes and its complications. Although still rare, type 2 diabetes is being diagnosed more frequently in children and adolescents.

In Michigan, we have no way to measure state-specific prevalence of Type 1 versus Type 2, so we assume that the national rates apply.

Reference

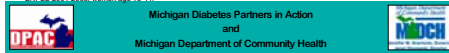
National Institute of Diabetes and Digestive and Kidney Diseases. National Diabetes Statistics fact sheet: general information and national estimates on diabetes in the United States, 2005. Bethesda, MD: U.S. Department of Health and Human Services, National Institutes of Health, 2005.

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Diabetes: The Numbers

Common Types of Diabetes

- Gestational Diabetes Mellitus
 - 7% of all U.S. pregnancies, or about 200,000 cases annually
 - Increased lifelong risk for mother and child for developing type 2 diabetes
 - More common in Latina women (4.4%) than Whites or Blacks (2.5% and 2.1%)

NIDDK, National Diabetes Statistics fact sheet, HHS, NIH, 2005.
BRFSS 2001-2003, women age 18-44.


Gestational diabetes mellitus is a form of glucose intolerance diagnosed in some women during pregnancy.

Gestational diabetes affects 7%, or about 200,000 U.S. pregnancies each year.

After pregnancy, 5% to 10% of women with gestational diabetes are found to have type 2 diabetes. Women who have had gestational diabetes have an increased lifelong risk—up to a 50% chance—of developing diabetes in the next 5 to 10 years after pregnancy. Their offspring are also at higher risk for obesity and type 2 diabetes compared to other children.

Gestational diabetes is more common among African Americans, Hispanic/Latino Americans, and American Indians and Alaska Natives. It is also more common among obese women and women with a family history of diabetes.

- When self-reporting, gestational diabetes appears to be more common in Latina women as compared to non-Hispanic White and non-Hispanic Black women.

References

National Institute of Diabetes and Digestive and Kidney Diseases. National Diabetes Statistics fact sheet: general information and national estimates on diabetes in the United States, 2005. Bethesda, MD: U.S. Department of Health and Human Services, National Institutes of Health, 2005.

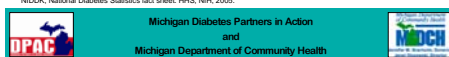
BRFSS, CDC 2001 – 2003, for women of childbearing age (18-44).

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Diabetes: The Numbers

What is Pre-diabetes?

- People with pre-diabetes have blood glucose levels higher than normal but not high enough to be diagnosed with diabetes
 - **Impaired fasting glucose (IFG):** Fasting blood sugar level is 100-125mg/dL
 - **Impaired glucose tolerance (IGT):** Blood sugar level is 140-199mg/dL after a 2-hour glucose tolerance test
- At least **54 million** U.S. adults age 20 and older have **pre-diabetes** – which raises their risk for type 2 diabetes and cardiovascular disease

NIDDK, National Diabetes Statistics fact sheet, HHS, NIH, 2005.


Pre-diabetes is a condition that raises the risk of developing type 2 diabetes, heart disease, and stroke.

People with pre-diabetes have high blood glucose levels higher than normal, but not yet high enough to be diagnosed with diabetes.

People with pre-diabetes can prevent or delay the onset of type 2 diabetes through lifestyle change and/or medication - though no medications are approved for diabetes prevention.

At least 54 million U.S. adults age 20 and older have pre-diabetes, which independently raises the risk of developing type 2 diabetes and cardiovascular disease.

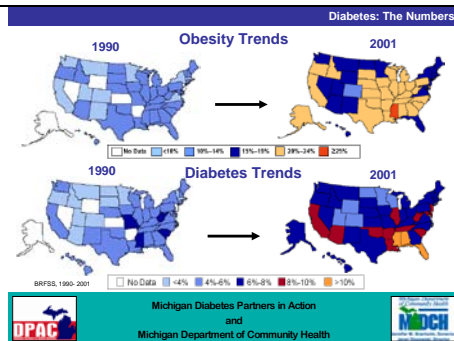
It is important to note that progression to diabetes among people with pre-diabetes is not inevitable.

- The NIDDK-funded Diabetes Prevention Program (DPP) clinical trial show that people who lost 5 to 7 percent of their body weight by making healthy food choices and being physically active 30 minutes a day, 5 days a week reduced the onset of type 2 diabetes by 58%. This powerful reduction in risk was found in all subgroups, including men and women, ethnic groups at high risk, women with a history of Gestational Diabetes, and people age 60 and older.
- In fact, participants over the age of 60—who as a group have a nearly 20 percent prevalence of diabetes—reduced their development of diabetes by 71%.

Reference

National Institute of Diabetes and Digestive and Kidney Diseases. National Diabetes Statistics fact sheet: general information and national estimates on diabetes in the United States, 2005. Bethesda, MD: U.S. Department of Health and Human Services, National Institutes of Health, 2005.

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These maps show the dramatic increase in obesity and diabetes in the United States from 1990-2001.

This increase is important because obesity is a major risk factor for type 2 diabetes and because about 55% of adults in the U.S. who have diabetes are also obese (CDC).

Michigan ranks 9th in the nation for obesity (2004-2006).

References

BRFSS, CDC 1990 – 2001.

Centers for Disease Control and Prevention. Prevalence of overweight and obesity among adults with diagnosed diabetes--United States, 1988-1994 and 1999-2002. MMWR. 004;53: 1066-1068.

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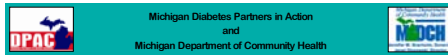
Diabetes: The Numbers

U.S. Diabetes Prevalence

All Ages, 2005

- 20.8 million people have diabetes
 - **Diagnosed:** 14.6 million people
 - **Undiagnosed:** 6.2 million people
- 1.5 million new cases were diagnosed in 2005

NIDDK, National Diabetes Statistics fact sheet, NIH, NIH, 2005.



In 2005, at least 15 million Americans had been diagnosed with diabetes and another 6 million were undiagnosed—for a total of about 21 million Americans with diabetes.

Remember that of diagnosed cases, type 1 diabetes accounts for 5 to 10 percent and type 2 diabetes accounts for 90 to 95 percent.

1.5 million new cases of diabetes were diagnosed in people age 20 or older in 2005.

The number of people with diagnosed diabetes is estimated to increase to 17.4 million people by 2020.

Reference

National Institute of Diabetes and Digestive and Kidney Diseases. National Diabetes Statistics fact sheet: general information and national estimates on diabetes in the United States, 2005. Bethesda, MD: U.S. Department of Health and Human Services, National Institutes of Health, 2005.

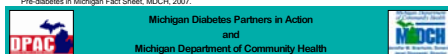
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Diabetes: The Numbers

Michigan Diabetes Prevalence

Age 18 and Older, 2004

- 7.9% of Michigan adults (or 593,200 persons) have diagnosed diabetes
 - An estimated 292,000 adults have undiagnosed diabetes
- Approximately 1-3% of women report a history of gestational diabetes
- Another 2 million adults have pre-diabetes (27.3% of adults)

Diabetes in Michigan Fact Sheet, MDCH, 2005.
Michigan Behavioral Risk Factor Survey, 2001-2005.
Pre-diabetes in Michigan Fact Sheet, MDCH, 2007.

Nearly 8% of all Michigan adults have been diagnosed with diabetes. That's 593,200 persons.

Michigan has the 11th highest (tied) diabetes prevalence rate in the nation.

Since only 2/3 of people who have diabetes have actually been diagnosed, this means another 292,000 have diabetes and do not know it.

Self-reported gestational diabetes rates in Michigan are between 1-3%. This is lower than the reported national rate (7%) from clinical data.

- Currently, the question for mother's diabetes status on Michigan's birth certificates does not distinguish between diabetes that existed before pregnancy and gestational diabetes during pregnancy. A simple change to collect type of diabetes of the mother could produce more reliable estimates of gestational diabetes in Michigan.

Statewide, there are no racial differences seen in the rate of reported gestational diabetes.

- However, data from Detroit (2001–2005) for women 18-44, show 4.5% of Latinas and 1.6% of African Americans reported a history of gestational diabetes.

It is estimated that over 2 million Michigan adults have pre-diabetes and 3/4 of these adults were age 40 and older.

References

Diabetes in Michigan Fact Sheet. Michigan Department of Community Health, 2006.

Unpublished data from the Michigan Behavioral Risk Factor Survey. Michigan Department of Community Health, 2001-2005.

Pre-Diabetes in Michigan Fact Sheet. Michigan Department of Community Health, 2007.

National Opinion Research Center, BRFSS Surveys for Detroit, 2001-2005.

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Diabetes: The Numbers

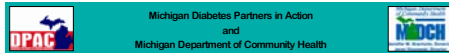
U.S. Diabetes Prevalence

Race/Ethnicity

- American Indians and Alaskan Natives are 2.2 times as likely to have diabetes*
- African Americans are 1.8 times as likely to have diabetes*
- Hispanic/Latinos are 1.7 times as likely to have diabetes*

* as compared to non-Hispanic whites

NIDDK, National Diabetes Statistics fact sheet. HHS, NIH, 2005.



American Indians, African Americans, Hispanic/Latino Americans, and some Asian Americans and Native Hawaiians or other Pacific Islanders are at particularly high risk for type 2 diabetes and its complications.

About 99,500 or 12.8 percent of **American Indians and Alaska Natives** aged 20 years or older who received care from the Indian Health Service (IHS) in 2003 had diabetes.

- American Indians and Alaska Natives are 2.2 times as likely to have diabetes as non-Hispanic whites.

3.2 million or 13.3 percent of all **non-Hispanic blacks** aged 20 years or older have diabetes.

- African Americans are 1.8 times as likely to have diabetes as non-Hispanic whites.

It is estimated that 2.5 million or 9.5 percent of all **Hispanic/Latino Americans** aged 20 years or older have diabetes.

- Mexican Americans are 1.7 times as likely to have diabetes as non-Hispanic whites. Most data are available for Mexican Americans. More data are needed to derive estimates for other Hispanic/Latino Americans.

The total prevalence of diabetes is not available for **Asian Americans or Pacific Islanders**. It is important to note that the absence of data for Asian Americans and Pacific Islanders does not mean they are not affected by diabetes.

- However, in Hawaii, Asians, Native Hawaiians, and other Pacific Islanders aged 20 years or older are more than 2 times as likely to have diagnosed diabetes as non-Hispanic whites.
- In California, Asians are 1.5 times as likely to have diagnosed diabetes as non-Hispanic whites. Other groups within these populations also have an increased risk for diabetes.

Reference

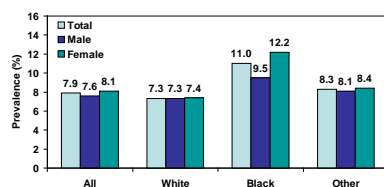
National Institute of Diabetes and Digestive and Kidney Diseases. National Diabetes Statistics fact sheet: general information and national estimates on diabetes in the United States, 2005. Bethesda, MD: U.S. Department of Health and Human Services, National Institutes of Health, 2005.

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Diabetes: The Numbers

Michigan Diabetes Prevalence

Race/Ethnicity and Gender



Diabetes in Michigan Fact Sheet, MDCH, 2006.



Diabetes prevalence is significantly higher among Blacks in Michigan as compared to Whites and Other races.

Diabetes is more common in Black women.

It is estimated that 8.5% of Hispanic adults in Michigan have been diagnosed with diabetes. That's 17,000 persons.

Reference

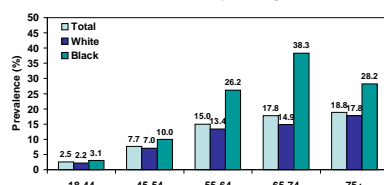
Diabetes in Michigan Fact Sheet. Michigan Department of Community Health, 2006.

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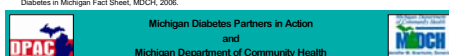
Diabetes: The Numbers

Michigan Diabetes Prevalence

Race/Ethnicity and Age



Diabetes in Michigan Fact Sheet, MDCH, 2006.



Blacks in Michigan have significantly higher diabetes prevalence in the ages of 55-64 and 65-74 as compared to Whites and Other races of the same age groups.

Reference

Diabetes in Michigan Fact Sheet. Michigan Department of Community Health, 2006.

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Diabetes: The Numbers

U.S. Diabetes Prevalence


Young people under age 20

- 154,369 or 0.18% of young people under age 20 have diabetes, or 1 in 523
- Type 1 diabetes is more common than type 2, except in American Indian youth
 - Type 2 diabetes accounts for 6% of non-Hispanic white youth and 76% of American Indian youth (age 10-19)
- Diabetes in youth is more common in young females and in young people ages 10-19

(SEARCH) Pediatrics. 118:1510-1518, 2006.



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Close to 155,000 people under the age of 20 — or 0.18 percent of young people under age 20 have diabetes. That's one in 523.

Type 1 diabetes is more common than type 1 diabetes, except in American Indian youth.

Diabetes is more common in young females than males, and in young people ages 10-19.

Diabetes occurs in less than 1 in 1,000 young people ages 0 to 9.

- Type 1 diabetes accounts for 97% of diagnosed cases in this age group.
- Diabetes is more common in non-Hispanic white young people ages 0–9 than in any other ethnic group.

Diabetes occurs in one in 357 young people ages 10–19.

- Type 1 diabetes accounts for 81% of diagnosed cases in this age group.
- Type 2 diabetes accounts for 6% (non Hispanic white youth) to 76% (American Indian youth) of diagnosed diabetes in this age group.

Reference

The Burden of Diabetes Mellitus Among US Youth: Prevalence Estimates From the SEARCH for Diabetes in Youth Study Group Pediatrics. 2006; 118: 1510-1518.

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Diabetes: The Numbers

Michigan Diabetes Prevalence


Young people under age 20

- Using National rates, there are an estimated 5,000 youth with diabetes in Michigan
 - 21% of these children reside in Wayne county
 - 12% in Oakland County
 - 8% in Macomb County
 - 6% in Kent County
 - 5% in Genesee County

(SEARCH) Pediatrics. 118:1510-1518, 2006.
2005 Michigan Resident Population, NCHS.



Michigan Diabetes Partners in Action
and
Michigan Department of Community Health



It is estimated there are over 5,000 youth with diabetes in Michigan.

We are currently unable to measure the prevalence of diabetes among Michigan youth. Known national rates have been applied to the Michigan youth population to provide these estimates.

41% of youth with diabetes can be found in Southeast Michigan.

Reference

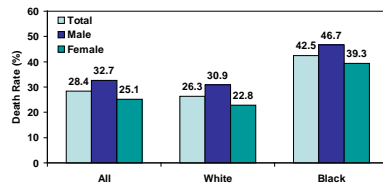
Unpublished data using *The Burden of Diabetes Mellitus Among US Youth: Prevalence Estimates From the SEARCH for Diabetes in Youth Study Group Pediatrics*. 2006; 118: 1510-1518 and the 2005 Michigan Resident Population file (from the National Center for Health Statistics).

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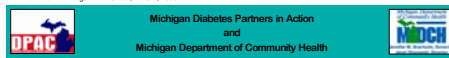
Diabetes: The Numbers

Michigan Diabetes Mortality

Age-adjusted Rates with Diabetes as Leading Cause



Diabetes in Michigan Fact Sheet, MDCH, 2006.



Diabetes is the 6th leading cause of death among Michigan residents (3.5% of all deaths).

Michigan ranks 10th in the nation for deaths due to diabetes.

Death from diabetes is more common among men.

Blacks have a significantly higher rate of death as compared to Whites.

Although it was not the main cause, diabetes contributed to another 6% of all Michigan deaths. Together, that's nearly 10% of all Michigan deaths attributed to diabetes either directly or indirectly.

Reference

Diabetes in Michigan Fact Sheet. Michigan Department of Community Health, 2006.

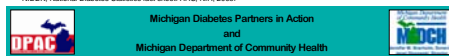
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Diabetes: The Numbers

Diabetes Complications

- 2 in 3 people with diabetes die of heart disease or stroke
- Diabetes is the #1 cause of adult blindness
- Diabetes is the #1 cause of kidney failure
- Diabetes causes more than 60% of non-traumatic lower-limb amputations each year

NIDDK, National Diabetes Statistics fact sheet, NIH, NIH, 2005.



About 2 in 3 people with diabetes die from heart disease or stroke. The risk for heart disease and stroke is 2 to 4 times higher in people with diabetes.

Diabetes is the leading cause of new cases of blindness among adults aged 20 to 74 years.

Diabetes is the leading cause of kidney failure, accounting for 44 percent of new cases in 2002. In 2002, close to 154,000 people with end-stage kidney disease due to diabetes were living on chronic dialysis or with a kidney transplant in the United States and Puerto Rico.

Diabetes causes more than 60 percent of nontraumatic lower-limb amputations each year. In 2002, about 82,000 nontraumatic lower-limb amputations were performed in people with diabetes.

Reference

National Institute of Diabetes and Digestive and Kidney Diseases. National Diabetes Statistics fact sheet: general information and national estimates on diabetes in the United States, 2005. Bethesda, MD: U.S. Department of Health and Human Services, National Institutes of Health, 2005.

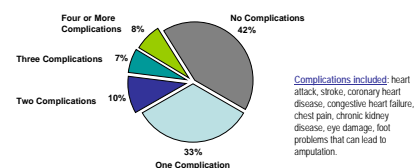
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Diabetes: The Numbers

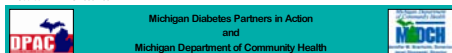
U.S. Diabetes Complications

Type 2 Diabetes

An estimated 3 out of 5 people (58%) have one or more complications.



Source: NHANES 1999-2004



An estimated 3 out of 5 people with diagnosed Type 2 diabetes have one or more complication.

People with diabetes are 2-3 times more likely to have microvascular complications (chronic kidney disease, foot problems, and eye damage) than macrovascular complications (cardiovascular disease and stroke).

Reference

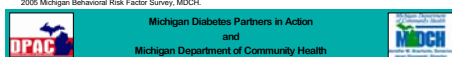
State of Diabetes Complications in America. American Association of Clinical Endocrinologists. 2006.

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Diabetes: The Numbers

Michigan Diabetes Complications

- Cardiovascular Disease
 - 27% of PWD have had a heart attack, stroke or angina
- Blindness
 - 20% of PWD have been told they have retinopathy
- Kidney Disease
 - 42% of dialysis patients have diabetes
 - 1 out of 3 kidney transplants have diabetes
- Amputation
 - 72% of non-traumatic lower limb amputations are to PWD

Diabetes in Michigan Fact Sheet, MDCH, 2006.
2006 Michigan Behavioral Risk Factor Survey, MDCH.

In Michigan, 9% of people without diabetes have had a cardiovascular event (heart attack, stroke, or angina). For people with diabetes, this rate is tripled.

1 out of 5 persons with diabetes in Michigan have been told they have diabetic retinopathy, the leading cause of blindness in persons with diabetes.

Diabetes is strongly linked to kidney disease and is the leading reason for dialysis and kidney transplants. The prevalence of diabetes among dialysis patients in Michigan (42% of patients) is similar to the national average (43%). However, there are a larger proportion of kidney transplants due to diabetes (31%) in Michigan's Renal Network than in the nation (23%).

A majority of the non-traumatic lower limb amputations in Michigan occur in people with diabetes. The next most common reason for lower limb amputation is atherosclerosis (9%).

References

Diabetes in Michigan Fact Sheet. Michigan Department of Community Health, 2006.

Unpublished data from the Michigan Behavioral Risk Factor Survey. Michigan Department of Community Health, 2005.

Unpublished data from the Michigan Inpatient Database. Michigan Hospital Association, 2005.

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Diabetes: The Numbers

Michigan Diabetes Health

	PWD	All of Michigan
Report health as fair or poor	48%	15%
Are obese	55%	27%
Have high cholesterol	62%	39%
Have hypertension (HBP)	66%	28%
Are living with disability	42%	22%

Diabetes in Michigan Fact Sheet, MDCH, 2006.
2006 Michigan Behavioral Risk Factor Survey, MDCH.



Overall, people with diabetes in Michigan report poorer health and are more likely to have high risk factors for other chronic diseases.

References

Diabetes in Michigan Fact Sheet. Michigan Department of Community Health, 2006.

Health Risk Behaviors in the State of Michigan: 2005 Behavioral Risk Factor Survey, 19th Annual Report. Michigan Department of Community Health, 2007.

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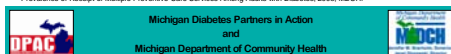
Diabetes: The Numbers

Michigan Diabetes Care

Receipt of Preventive Care

Two HbA1c tests annually	67%
Dilated eye exam annually	68%
Foot exam annually	67%
All 3 services within a year	34%

Prevalence of Receipt of Multiple Preventive-Care Services Among Adults with Diabetes, 2005, MDCH.



Three national health objectives for 2010 are to increase the proportion of adults with diabetes who have:

- 2 hemoglobin A1c tests (target is 65%)
- A dilated eye exam, (target is 75%) and
- A foot exam by a health care professional (target is 75%).

When each exam is looked at individually, it looks like most people with diabetes are getting the care they need.

However, when it is asked if people are getting all of the recommended exams in the same year, then only 1/3 of people with diabetes are getting the care they need.

There are no racial differences in receipt of all 3 preventive-care exams.

People who have health insurance are nearly 5 times more likely to have received all 3 preventive-care.

People who have taken a Diabetes Self-Management course are twice as likely to have received all 3 preventive-care.

People who have had diabetes longer are more likely to have received all 3 preventive-care.

References

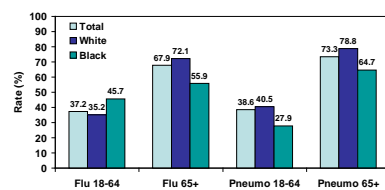
Prevalence of receipt multiple preventive-care services among adults with diabetes, Michigan 2005. D El Reda, DrPH, MPH, LA Corteville, MS, Michigan Department of Community Health. Poster presented at the 2007 Michigan Epidemiology Conference, Ann Arbor, MI, April 12, 2007.

Prevalence of receiving multiple preventive-care services among adults with diabetes --- United States, 2002-2004. Q Mukhtar, PhD, L Pan, MD, L Jack Jr, PhD, DL Murphy, MPH, Div of Diabetes Translation, National Center for Chronic Disease Prevention and Health Promotion, CDC. MMWR. November 11, 2005/55(44):1130-1133.

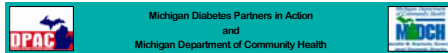
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Diabetes: The Numbers

Michigan Diabetes Care Immunization Rates



2005 Michigan Behavioral Risk Factor Survey, MDCH.



National health objectives for 2010 are to increase the proportion of adults with diabetes who have:

- An annual flu shot, and
- A pneumococcal immunization once in their lifetime.

For both immunizations, the target for the general population is 60% for people age 18-64 and 90% for people age 65 and older.

While all races are below the target, Blacks have much lower rates of flu immunization for ages 65+ and pneumonia immunizations for all ages.

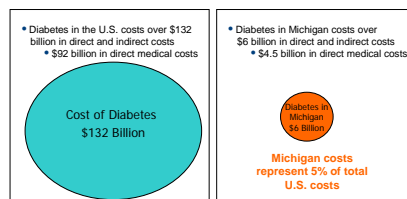
Reference

Unpublished data from the Michigan Behavioral Risk Factor Survey. Michigan Department of Community Health, 2005.

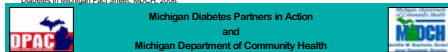
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Diabetes: The Numbers

A Costly Disease



Lewin Group, Inc., for the American Diabetes Association, 2003. Diabetes in Michigan Fact Sheet, MDCH, 2005.



The average cost for a person with diabetes is \$13,243, and the average cost for a person without diabetes is \$2,560 (**over 5 times higher**).

- After adjusting for age, gender, and race/ethnicity, people with diabetes had medical expenditures 2.4 times higher than people without diabetes.

Of the \$132 billion in direct medical costs, \$24 billion are related to diabetes complications.

Annual expenditures for a person with complications from type 2 diabetes are about \$10,000, of which nearly \$1,600 is paid out-of-

pocket for co-pays and deductibles.

The cost of diabetes could increase to \$192 billion by 2020. The cost could be higher if the cost of health care outpaces the overall cost of living, or if the growing problem of obesity increases the prevalence of type 2 diabetes.

References

Economic costs of diabetes in the U.S. in 2002. The Lewin Group for the American Diabetes Association. Diabetes Care 26, 917-932, 2003.

Diabetes in Michigan Fact Sheet. Michigan Department of Community Health, 2006.

State of Diabetes Complications in America. American Association of Clinical Endocrinologists. 2006.

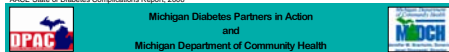
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Diabetes: The Numbers

Costs by Complication

Diabetes Complication	Direct Cost per Person
Eye Damage	\$1,785
Foot Problems	\$4,687
Coronary Heart Disease	\$6,062
Stroke	\$7,806
Congestive Heart Failure	\$7,932
Chronic Kidney Disease	\$9,002
Heart Attack	\$14,150
Kidney Failure	\$60,000

AACE State of Diabetes Complications Report, 2006



Recall that 3 out of 5 persons with diabetes have one or more complications. Complications range in cost from a few thousand dollars to tens of thousands of dollars.

- Part of these cost estimates are the out-of-pocket costs, which average \$400 per complication.

These estimates do not account for changes to quality of life.

Reference

State of Diabetes Complications in America. American Association of Clinical Endocrinologists. 2006.

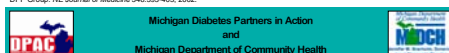
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Diabetes: The Numbers

Prevent and Control Diabetes

- Modest physical activity and healthy eating can cut a person's risk for developing type 2 diabetes by up to 60%
- Diabetes treatment is 95% self-care
 - People could seek information and support from the local community (MODE, ADA, health care professionals, etc.)
- Early intervention and treatment can prevent and/or delay complications

DPP Group. NE Journal of Medicine 346:393-403, 2002.



Modest lifestyle changes, including weight loss (5-10% of body weight) and physical activity (30 minutes/5 days a week), are nearly twice as effective in preventing or delaying onset of diabetes than drug therapy (metformin).

The health of people with diabetes is largely dependent on their own self-management. There are many community resources available to support people with diabetes.

People with diabetes and their health care providers can reduce the occurrence of diabetes complications by controlling the levels of blood

glucose, blood pressure, and blood lipids, and by receiving other preventive care practices in a timely manner.

References

Reduction in the incidence of type 2 diabetes with lifestyle intervention or metformin. Diabetes Prevention Program Research Group. N Engl J Med 346:393-403, 2002.

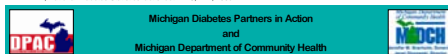
The prevention or delay of type 2 diabetes. American Diabetes Association. Diabetes Care 25:742-749, 2002.

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Diabetes: The Numbers

Prevent and Control Diabetes

Blindness	Up to 90% preventable with proper screening and care
Amputation	Up to 85% preventable with implementation of foot care programs that include regular exams and patient education
Death due to influenza	80% preventable with influenza vaccination
Kidney Failure	50% preventable with better control of blood pressure and blood glucose levels
Heart disease and stroke	Up to 50% preventable with improved control of blood pressure, cholesterol and lipids
Nerve disease	40% preventable with a 1% reduction in HbA1c test results
Death due to heart disease or stroke	30% preventable with better control of blood pressure, blood glucose and lipid levels

NIDDK, National Diabetes Statistics fact sheet, NIH, NIH, 2005.


Studies have found that **improved glycemic control** benefits people with either type 1 or type 2 diabetes. In general, every percentage point drop in A1C blood test results (i.e., from 8.0% to 7.0%) reduces the risk of microvascular complications — eye, kidney, and nerve diseases — by 40%.

Blood pressure control reduces the risk of heart disease or stroke among persons with diabetes by 33% to 50%, and the risk of microvascular complications by about 33%.

Improved cholesterol or blood lipids control (for example, HDL, LDL, and triglycerides) can reduce cardiovascular complications by 20% to 50%.

Reference

National Institute of Diabetes and Digestive and Kidney Diseases. National Diabetes Statistics fact sheet: general information and national estimates on diabetes in the United States, 2005. Bethesda, MD: U.S. Department of Health and Human Services, National Institutes of Health, 2005.

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Diabetes: The Numbers

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